



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,181	10/11/2000	Stefan Lundberg	STGUP006	8316

28436 7590 10/05/2004

IP CREATORS  
P. O. BOX 2789  
CUPERTINO, CA 95015

EXAMINER

LONG, HEATHER R

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/689,181

Applicant(s)

LUNDBERG, STEFAN

Examiner

Heather R Long

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 26-30 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - a. Page 3, line 22: change "wide" to --narrow--.
  - b. Page 3, line 25: change "narrower" to --wider--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 24, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikari et al. (U.S. Patent 5,933,186).

Regarding claim **24**, Ikari et al. discloses in Fig. 18 an imaging system for providing an image along an optical axis of an input (138) of an image producing apparatus, and the imaging system comprising: a first reflector (137B) positioned to intersect the optical axis at an angle and the first reflector (137B) rotatable about the optical axis; and a second reflector (137A) optically coupled with the first reflector (137B) and the second reflector (137A) radially displaced from the first reflector (137B) configured both for rotation about the optical axis and for

tilting with respect to the optical axis to alter an image provided to the input of the image producing apparatus (col. 16, lines 6-17).

Regarding claim **27**, Ikari et al. discloses a method for providing an image along an optical axis of an input of an image producing apparatus, and the method for providing comprising the acts of: positioning a first reflector (137B) to intersect the optical axis at an angle; positioning a second reflector (137A) along a radius about the optical axis; and rotating the first reflector (137B) together and the second reflector (137A) about the optical axis to pan an image provided to the input of the image producing apparatus (Fig. 18; col. 16, lines 6-17).

Regarding claim **28**, Ikari et al. discloses a method for providing an image further comprising the act of: tilting the second reflector to tilt the image provided to the input of the image producing apparatus (col. 16, lines 6-17).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 8-16, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikari et al. (U.S. Patent 5,933,186) in view of Nayar (U.S. Patent 6,118,474), and further in view of NakaMats (U.S. Patent 4,933,822).

Regarding claim 1, Ikari et al. discloses in Fig. 18 an image altering device for an image producing apparatus with an optical input (138) characterized by: a mirror having a first plane surface (137A); a driving device (168A) coupled to the mirror (137A) and adapted to rotate the mirror (137A) to a first position, where the first plane surface is inserted into an optical path of the image producing apparatus, the optical path being external to the optical input (138), thereby providing a first field of view of the image producing apparatus, the driving device (137A) also being adapted to rotate the mirror (137A) to a second position (changing the direction of the mirror (137A)), thereby providing a second field of view of the image producing apparatus (col. 16, lines 6-17). However, Ikari et al. fails to disclose a mirror comprising a second curved surface, whereby the mirror may be rotated to insert the second curved surface into the optical path of the image producing apparatus.

Referring to the Nayar reference, Nayar discloses in Fig. 21 an image altering device for an image producing apparatus (2111) with an optical input characterized by: a mirror with a curved surface (2135) that is inserted into the optical path (the optical path being external to the optical input) of the image producing apparatus (2111) (col. 16, lines 19-37). Nayar also discloses that the mirror with a curved surface may be mounted on a moveable base, whereby movement of the mirror produces a changing field of view (col. 3, line 64 – col. 4, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Nayar with Ikari et al. to substitute a mirror with a curved surface for the mirror with a plane surface to allow the image producing apparatus to have a omnidirectional field of view instead of a narrower field of view that the plane surface provides.

Referring to the NakaMats reference, NakaMats discloses in Fig. 53 a mirror having a first plane surface and a second curved surface (col. 2, lines 25-35) that may be rotated to allow the user to choose either side.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mirror with a first plane surface and a second curved surface and combined the teachings of NakaMats with Ikari et al. and Nayar to provide the image producing apparatus with the option of using either side of the mirror to allow the user to choose a narrow field of view or a wider field view. The curved portion of the mirror as disclosed by NakaMats is concave, however it would have been obvious to one skilled in the art that a convex surface could be substituted for the concave surface.

Regarding claim 2, Ikari et al. in view of Nayar in view of NakaMats discloses a device comprising a mirror where the curved surface forms a portion of a sphere (Nayar: Fig. 21).

Regarding claim 3, Ikari et al. in view of Nayar in view of NakaMats discloses a device where the first plane surface has an angular displacement of 180 degrees with respect to the second curved surface (NakaMats: Fig. 53).

Regarding claim **8**, Ikari et al. in view of Nayar in view of NakaMats discloses a device where the driving device is adapted to receive a control signal from a control unit and to rotate the mirror to the first position or to the second position depending on the value of the control signal (Ikari et al.: col. 16, lines 18-32).

Regarding claim **9**, Ikari et al. in view of Nayar in view of NakaMats discloses all subject matter as discussed in with respect to claim 1, except that the driving device comprises at least one belt for rotating the mirror. Official Notice is taken that the driving device can use at least one belt for rotating the mirror.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used at least one belt for rotating the mirror because it is well known in the art that a belt can be used to rotate an object.

Regarding claim **10**, Ikari et al. in view of Nayar in view of NakaMats discloses a device where the driving device comprises at least one gear wheel for rotating the mirror (Ikari et al.: col. 10, lines 28-44).

Regarding claims **11-13**, these are method claims corresponding to the apparatus claims 1, 3, and 4. Therefore, claims 11-13 are analyzed and rejected as previously discussed with respect to claims 1, 3, and 4.

Regarding claim **14**, Ikari et al. discloses in Fig. 18 a camera having panning and/or tilting functionality, comprising: a camera housing (the area

surrounding 138, 140, 172, and 174) with an optical input (138), such as a lens or objective; an image capturing unit (140) for producing a digital image from light received through the optical input (138) and a controller, characterized by: a mirror, mounted externally to the camera housing, having a first plane surface (137A); a driving device (168A) coupled to the mirror (137A) and adapted to rotate the mirror (137A) to a first position, where the first plane surface is inserted into an optical path of the image producing apparatus, the optical path being external to the optical input (138), thereby providing a first field of view of the image producing apparatus, the driving device (137A) also being adapted to rotate the mirror (137A) to a second position (changing the direction of the mirror (137A)), thereby providing a second field of view of the image producing apparatus (col. 16, lines 6-17). However, Ikari et al. fails to disclose a mirror comprising a second curved surface, whereby the mirror may be rotated to insert the second curved surface into the optical path of the image producing apparatus.

Referring to the Nayar reference, Nayar discloses in Fig. 21 an image altering device for an image producing apparatus (2111) with an optical input characterized by: a mirror with a curved surface (2135) that is inserted into the optical path (the optical path being external to the optical input) of the image producing apparatus (2111) (col. 16, lines 19-37). Nayar also discloses that the mirror with a curved surface may be mounted on a moveable base, whereby

movement of the mirror produces a changing field of view (col. 3, line 64 – col. 4, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Nayar with Ikari et al. to substitute a mirror with a curved surface for the mirror with a plane surface to allow the image producing apparatus to have a omnidirectional field of view instead of a narrower field of view that the plane surface provides.

Referring to the NakaMats reference, NakaMats discloses in Fig. 53 a mirror having a first plane surface and a second curved surface (col. 2, lines 25-35) that may be rotated to allow the user to choose either side.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mirror with a first plane surface and a second curved surface and combined the teachings of NakaMats with Ikari et al. and Nayar to provide the image producing apparatus with the option of using either side of the mirror to allow the user to choose a narrow field of view or a wider field view. The curved portion of the mirror as disclosed by NakaMats is concave, however it would have been obvious to one skilled in the art that a convex surface could be substituted for the concave surface.

Regarding claim **15**, grounds for rejecting claim 2 apply for claim 15 in its entirety.

Regarding claim **16**, grounds for rejecting claim 3 apply for claim 16 in its entirety.

Regarding claim **21**, grounds for rejecting claim 8 apply for claim 21 in its entirety.

Regarding claim **22**, grounds for rejecting claim 9 apply for claim 22 in its entirety.

Regarding claim **23**, grounds for rejecting claim 10 apply for claim 23 in its entirety.

6. Claims 4-7 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikari et al. in view of Nayar in view of NakaMats as applied to claims 1 and 14 above, and further in view of Takemoto et al. (U.S. Patent 4,322,740).

Regarding claim **4**, Ikari et al. in view of Nayar in view of NakaMats differs from claim 4 in that claim 4 further requires the device to comprise a mirror with a third surface with an optical characteristic different from the first plane surface or the second curved surface.

Referring to the Takemoto et al. reference, Takemoto et al. discloses a mirror (104 or 105) with a surface with an optical characteristic different from the first plane surface or the second curved surface as disclosed by Ikari et al. in view of Nayar in view of NakaMats. Takemoto et al. discloses a mirror (104) that is a red reflecting mirror and a mirror (105) that is a blue reflecting mirror (col. 6, line 65 – col. 7, line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Takemoto et

al. with Ikari et al. in view of Nayar in view of NakaMats in order to provide the user of the image producing apparatus with the option of using another mirror that would help to control exposure. It is also well known in the art to have a mirror with a plurality of sides. Therefore, it would have been obvious to mount the third mirror with the mirror with the other two surfaces in order to save space in the structural design. Also, after having a mirror now with three sides the driving device as taught by Ikari et al. in view of Nayar in view of NakaMats would also be able to rotate the mirror to a third position, allowing the third surface to be inserted into the optical path of the image producing apparatus.

Regarding claim 5, Ikari et al. in view of Nayar in view of NakaMats in view of Takemoto et al. discloses a device where the third surface is plane (Takemoto et al.: Fig. 10).

Regarding claim 6, Ikari et al. in view of Nayar in view of NakaMats in view of Takemoto et al. discloses a device where the third surface attenuates certain spectral components of the reflected light (Takemoto et al.: col. 6, line 65 – col. 7, line 3).

Regarding claim 7, Ikari et al. in view of Nayar in view of NakaMats in view of Takemoto et al. discloses a device where the spectral components of the reflected light are uniformly attenuated (Takemoto et al.: col. 6, line 65 – col. 7, line 3; the whole mirror either reflects red or blue light over the entire surface of the mirror).

Regarding claim **17**, grounds for rejecting claim 4 apply for claim 17 in its entirety.

Regarding claim **18**, grounds for rejecting claim 5 apply for claim 18 in its entirety.

Regarding claim **19**, grounds for rejecting claim 6 apply for claim 19 in its entirety.

Regarding claim **20**, grounds for rejecting claim 7 apply for claim 20 in its entirety.

7. Claim 26, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikari et al. as applied to claim 24 above, and further in view of Nayar (U.S. Patent 6,118,474), and further in view of NakaMats (U.S. Patent 4,933,822).

Regarding claim **26**, Ikari et al. discloses in Fig. 18 an imaging system wherein the second reflector (137A) further comprises at least a first reflective surface optically coupled with the first reflector (137B) in response to the tilting of the second reflector (137A) to provide a distinctive field of view (col. 16, lines 6-17). However, Ikari et al. fails to disclose a second reflector comprising a second reflective surface that is optically coupled with the first reflector.

Referring to the Nayar reference, Nayar discloses in Fig. 21 an image altering device for an image producing apparatus (2111) with an optical input characterized by: a mirror with a curved surface (2135) that is inserted into the optical path (the optical path being external to the optical input) of the image

producing apparatus (2111) (col. 16, lines 19-37). Nayar also discloses that the mirror with a curved surface may be mounted on a moveable base, whereby movement of the mirror produces a changing field of view (col. 3, line 64 – col. 4, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Nayar with Ikari et al. to substitute a mirror with a curved surface for the mirror with a plane surface to allow the image producing apparatus to have a omnidirectional field of view instead of a narrower field of view that the plane surface provides.

Referring to the NakaMats reference, NakaMats discloses in Fig. 53 a mirror having a first plane surface and a second curved surface (col. 2, lines 25-35) that may be rotated to allow the user to choose either side.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mirror with a first plane surface and a second curved surface and combined the teachings of NakaMats with Ikari et al. and Nayar to provide the image producing apparatus with the option of using either side of the mirror to allow the user to choose a narrow field of view or a wider field view. The curved portion of the mirror as disclosed by NakaMats is concave, however it would have been obvious to one skilled in the art that a convex surface could be substituted for the concave surface.

Regarding claim **29**, the first limitation of the claim is a method claim corresponding to the apparatus claim 26. Therefore, claim 29 is analyzed and

rejected as previously discussed with respect to claim 26. Regarding the second limitation of the claim, it would have been obvious to one of ordinary skill in the art at the time the invention was made to tilt the second reflector to vary the magnification level of the view.

Regarding claim **30**, grounds for rejecting claim 29 apply for claim 30 in its entirety.

***Allowable Subject Matter***

8. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach or suggest an imaging system, which includes all the elements as claimed in claim 24, that further comprises: a planetary linkage of the first reflector and the second reflector including: a guide wheel rotatable about the optical axis, and the first reflector affixed to the guide wheel and the second reflector tiltably affixed to the guide wheel both for rotation about the optical axis; a mirror wheel rotatable about the optical axis; and a planetary member mechanically coupled to both the guide wheel and the mirror wheel such that a relative rotation there between produces a rotation of the planetary member and the planetary member further coupled to the second reflector such that the rotation of the planetary member effects the tilting of the second reflector.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R Long whose telephone number is 703-305-0681. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HRL  
October 1, 2004

  
TUAN HO  
PRIMARY EXAMINER